

# Science Olympiad 2017-2018 Season

## Hovercraft Checklist / Data Sheet

Version 1.0

### Event and Construction Requirements

- ☐ 1. Competitors construct only 1 vehicle
- ☐ 2.a. Reference materials secured in 3 ring binder
- ☐ 2.b. Competitors bring up to 2 calculators
- ☐ 2.c. Vehicle is labeled and impounded
- ☐ 2.e. Competitors wear eye protection during testing
- ☐ 2.f. Competitors must be able to answer questions about the vehicle per the Building Policy
- ☐ 3.a. Levitated vehicle fits into 40.0x40.0x40.0 cm box
- ☐ 3.b. Vehicle is levitated
- ☐ 3.c. Vehicle has  $\leq 2$  propellers and 2 motors
- ☐ 3.c. Propeller shielding holes  $\leq 3/8$ " in diameter
- ☐ 3.d. Vehicle has  $\geq 1/4$ " dowel  $< 5.0$  cm from front edge with top  $\geq 20.0$ cm above bottom
- ☐ 3.f. Only commercial batteries  $\leq 9.0$  V used
- ☐ 3.f. No lithium or lead batteries
- ☐ 3.f. No circuit exceeds 9.0 V
- ☐ 3.g. Only batteries, wires, motors, switches, resistors, potentiometers, capacitors, mechanical relays, fans
- ☐ 3.g. No brushless motors or ICs except those embedded into commercial fans
- ☐ 3.h. Vehicle has electric switch to start

### Impound Bonus

Vehicle impounded in labeled box	Y	N
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### Graphs / Tables (each item can get 0 – 2 points)

Data spans one variable range	_____
At least 10 data points	_____
Proper labeling (e.g. title, name, units)	_____
Number of graphs/tables (x 0.5 points)	_____
Labeled device picture/diagram	_____

### Part I: Written Test

Exam Score	_____
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### Penalties

No successful runs	Y	N
DQed for unsafe operation / no device	Y	N
Construction violations corrected	Y	N
Missed impound	Y	N

### Team Information

Team #: \_\_\_\_\_

Team Name: \_\_\_\_\_

Competitor Names: \_\_\_\_\_

### Successful Run 1

# of penny rolls carries	_____	
Competition violation(s)	Y	N
Competitors touch vehicle	Y	N
Timer #1 (nearest 0.1 s)	_____	
Timer #2 (nearest 0.1 s)	_____	
Timer #3 (nearest 0.1 s)	_____	
Run Time (Middle value of above)	_____	

### Successful Run 2

# of penny rolls carries	_____	
Competition violation(s)	Y	N
Competitors touch vehicle	Y	N
Timer #1 (nearest 0.1 s)	_____	
Timer #2 (nearest 0.1 s)	_____	
Timer #3 (nearest 0.1 s)	_____	
Run Time (Middle value of above)	_____	

### Team Verification

4.o. I verify the event supervisor has reviewed with me my team's recorded vehicle testing data.

Signature \_\_\_\_\_